10 The point P lies on the curve $y = (5x+2)^{\frac{2}{3}}$.
The x-coordinate of P is 5.
The normal to the curve at P intersects the line $x+y = 11$ at the point Q.
The point R is the reflection of Q in the tangent to the curve at P.

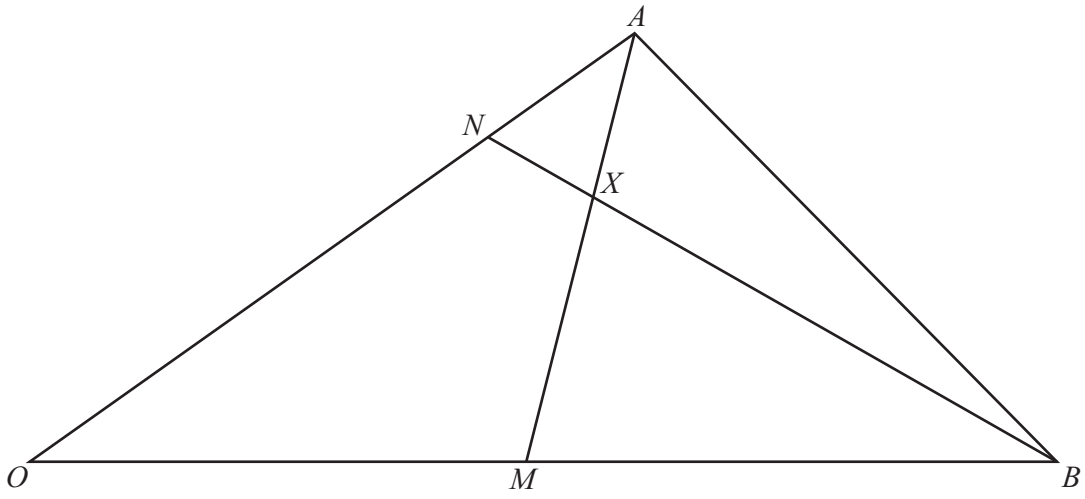
Find the coordinates of R. [9]

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Continuation of working space for Question 10.

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11



In the diagram, $\overrightarrow{OA} = \mathbf{a}$ and $\overrightarrow{OB} = \mathbf{b}$.
The point M is the midpoint of OB.
The point N is such that $\overrightarrow{ON} = 3\overrightarrow{NA}$.
The lines BN and AM intersect at the point X.
$\overrightarrow{BX} = \lambda\overrightarrow{BN}$, where λ is a constant.
$\overrightarrow{MX} = \mu\overrightarrow{MA}$, where μ is a constant.

(a) Find $\overrightarrow{OX}$ in terms of **a**, **b** and λ. [3]

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